**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Ch. 9 sections 1 & 2**

**Confidence intervals and Tests of significance- worksheet #1**

1. Many middle school students are still bullied, to this day. An SRS of 558 middle school students was taken and they found that 445 of them reported that they had been bullied before.
   1. Create and interpret a 98% confidence interval for the proportion of middle-schoolers who are bullied.
   2. A previous study found that ¾ (75%) of middle school students reported being bullied. Does the sample from above give evidence that this proportion has increased? Use a significance level of 0.05.
2. I want to create a 92% confidence interval that has a margin of error of 4%. I know from a previous study that the proportion should be close to 0.57. How big of a sample should I take?
3. I have the following confidence interval: (0.48, 0.66). What is the sample proportion and what is the margin of error?
4. For the same info as in #3, find the level of confidence if the sample size is 150.
5. If we reject our Ho at α=0.05, will we reject it at α=0.01? Why or why not?
6. If we reject our Ho at α=0.01, will we reject it at α=0.05? Why or why not?
7. A study in 2001 found that out of 6853 students surveyed, 726 of them were smokers.
   1. Create and interpret a 95% confidence interval for the true proportion of student smokers.
   2. A study done a year earlier (2000) claimed that the true proportion of student smokers was 11.2%. Is there enough evidence in the sample above to say that the true proportion of student smokers has changed?